

July 14, 2003

Ms. Gail Ann Cooper  
USEPA Headquarters 5304W  
Ariel Rios Building  
1200 Pennsylvania Ave.  
Washington, DC 20460  
United States of America



Dear Ms. Cooper:

**SUBJECT: DATA VALIDATION REPORT - VPRA PETITION**

This letter and the enclosed Data Validation Reports are being sent to you in response to the request for supporting information for the polynuclear aromatic hydrocarbon (PAH) data, which was included in the Petition for Rulemaking, submitted by the Vanadium Producers and Reclaimers Association (VPRA). The PAH information provided in the Petition for Rulemaking was performed using USEPA published methods and followed the Quality Assurance guidelines in the publication *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)*.

The VPRA members collected most of the samples from customer shipments to the recycling facilities. We have removed references to the VPRA member locations, customer names, and laboratory ID numbers from all data reports, as the names of the customers are confidential information. The laboratory performing the work is identified with sample dates and other pertinent information needed for data validation. Four of the twenty-four sample results are data supplied by customers to VPRA members as part of waste characterization. These results are confidential under contractual arrangement between VPRA members and their customers. The data is not provided in this transmittal, as it is third party data. However, a data review/validation report for these four samples is included in this package. The validation report is based on a review of the laboratory data supplied by the VPRA customers.

If you have any questions or need additional information, please contact me.

Sincerely,

A handwritten signature in black ink, reading 'Dale A. Scherger', is positioned below the 'Sincerely,' text. The signature is fluid and cursive, with a long, sweeping underline.

Dale Scherger  
Consultant for Vanadium Producers and Reclaimers Association  
Scherger Associates

Enclosure (1)

das

cc: John Hilbert, James Allen, and Robert Phelan

**DATA VALIDATION REPORT  
PAH DATA  
IN SUPPORT OF LDR PETITION  
FOR  
VANADIUM PRODUCERS AND RECLAIMERS ASSOCIATION**

**Introduction**

The Vanadium Producers and Reclaimers Association (VPRA), formerly the Ferroalloys Association, conducted a sampling and analysis program to collect data in support of a petition to change the LDRs for spent hydroprocessing catalyst (K171/K172). The program was performed by the members of the VPRA under the guidance of Scherger Associates. The goal of the sampling and analysis program was to collect valid and defensible data on the polynuclear aromatic hydrocarbon (PAH) content of spent hydroprocessing catalyst as regulated by the USEPA under the RCRA LDR regulations, 40 CFR 268. The data produced under this sampling and analysis program was submitted to the USEPA as part of the petition for a change in the LDRs for K171/K172.

USEPA has requested that the summary data submitted in the petition be supported by a data validation report and the lab reports. The samples collected and data obtained is sensitive business information, and customer names and locations are business confidential under agreements with the VPRA members. VPRA member and customer names have been removed from the lab reports in addition to other sensitive information. This reviewer had access to all the information in the original form to perform this validation.

Four of twenty-four sample results (coded M, N, O, P) are from data supplied by customers as part of the waste characterization process. These samples were collected and analyzed by the customer and third party laboratories. This third party data was reviewed based on the laboratory reports provided and a data review/validation report is included herein. However, the laboratory reports are not included, as this information is considered business confidential.

This report provides the results of the data validation process and provides supporting documents, including a validation summary showing key parameters (holding times, QA data, etc.). All of the sampling and analysis procedures were designed to follow the USEPA procedures as described in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)*.

## **Sample Plan and Sample Collection**

Scherger Associates advised the VPRA members on the proper methods for sample collection, and on proper sample handling and shipping procedures, in order to maintain the integrity of the samples. The LDR requirements specify that grab samples be collected (not composite samples) for testing to determine compliance with the LDRs. The sampling plan specified that grab samples of the spent hydroprocessing catalyst be collected from the bins of material selected for this testing program.

Information on the waste code (K171/K172) was provided by the VPRA customers on the manifests and shipping papers that accompanied the spent catalyst shipment to the recycling facility. The VPRA members provided this information to Scherger Associates.

The VPRA members collected the samples from bins of spent catalyst material received at their facilities. The grab samples were collected using clean scoops or coring devices. Sampling equipment was cleaned after collecting each sample, using detergent, water, and deionized water. Each sample was placed in a clean glass 250 or 500 mL container supplied by the laboratory for the PAH analysis. The sample bottle was labeled with a sample name (letter designation) and sample date. The sampler also maintained a record of the sample name cross referenced to actual source of the catalyst material. The samples were placed in a cooler with ice and sealed. A chain of custody form was filled out by the sampler and accompanied the samples to the laboratory. The coolers were either delivered to the laboratory or shipped by Federal Express overnight. The chain of custody forms were returned by the laboratory with the data packages. These forms have been reviewed and show that all samples were maintained under custody from the time of sample collection until receipt by the laboratory. Coolers were received by the laboratory with ice in them and all sample containers arrived intact. The actual chain of custody forms are not included in this validation package as they contain specific business confidential information.

Based on a review of the sampling plan, the chain of custody records, and discussion with the VPRA members prior to and after sample collection, the samples were collected in accordance with USEPA procedures for the collection of PAH grab samples. All information on sample collection, planning, and all supporting information indicates that proper procedures were followed to collect valid samples for the PAH analyses.

## **Analytical Results**

Pace Laboratories was selected to perform the PAH analysis by Method 8270 (SW846) based on their experience with PAH analysis and with producing data to meet exacting USEPA standards. The laboratory is also experienced in handling samples with oil present in the matrix. Pace performs hundreds of analyses for LDR determination with many of their clients associated with the oil refining industry. The laboratory familiarity with these types of sample matrix was considered important, as spent hydroprocessing catalyst can present analytical difficulties due to inferences from the residual oil in the

June, 2003

catalyst. Pace was informed of the intent of the analytical program, the need for supporting QA data, and information on the sample matrix and the regulatory requirements.

Twenty samples of spent hydroprocessing catalyst were collected and sent to the laboratory for analysis of PAH compounds. The samples results are reported in the LDR petition as Samples A, B, C, D, E, F, G, H, I, J, K, L and W1-W8. All samples were analyzed by Pace Laboratories using USEPA Method 8270 (SW846), which is a GC/MS procedure. The laboratory was informed in advance that the spent catalyst would be a "solid" matrix and possibly contain interfering compounds. They were asked to follow all USEPA procedures and QA, as described in SW846 and required by LDR regulations, and report the all of the data, with a narrative and /or footnotes regarding the analyses as reported by the analyst.

The original laboratory reports and QA/QC reports were used to review and validate the data. Copies of the laboratory reports and QA results are attached with this report. The data validation included review of:

- Sample collection date, sample extraction date, and sample analysis date to verify holding times were met;
- Surrogates results;
- Quantitation limits reported;
- Lab control sample (MS/MSD) results,
- Method blank results: and
- The narrative/footnotes supplied with flagged data.

Table 1 summarizes the review of the quantitative data validation items by this reviewer. The information was obtained from the laboratory reports and compared to the USEPA Methods and QA standards. The samples were received at the laboratory in three shipments. Each shipment of samples (batch) has supporting QA/QC documentation. All samples were extracted and analyzed within acceptable holding times. Surrogates, internal standards, method blanks, lab duplicates, and lab control samples were analyzed at a frequency in accordance with the SW 846 QA requirements and the requirement of Method 8270. Samples that did not have interferences were analyzed to a quantitation limit below the specified LDR for each PAH compound and at levels typical of the method. All of the data is judged valid and is flagged appropriately where needed. The laboratory flags and notations are included in the summary table presented the VPRA LDR petition.

The QA/QC data clearly shows that several of spent hydroprocessing catalyst samples included interfering compounds that required the samples to be diluted prior to analysis. In these cases, the surrogate recoveries could not be quantified. However, in all cases the laboratory provided lab control samples and other supporting data to show that the procedures were in control and the data valid. Some samples contained compounds that interfered with the extract concentration process, (presence of hydrocarbon compounds)

and resulted in elevated quantitation limits. Supporting QA data is supplied by the laboratory with each batch to show that the analytical processes were in control.

#### **Customer Supplied Data – Samples M, N, O, P**

Well-known laboratories, with reputations for providing quality data, analyzed all four of the datasets supplied by customers. The laboratory reports showed basic information needed to review and judge the validity of the data. All of the laboratory reports showed the sample collection date, the analysis date, and the report date. All analyses were conducted within required holding times. The laboratory reports also showed the analytical methods used, the sample results, and the laboratory reporting limits (quantitation limit) for each analysis. All analyses were performed using approved USEPA methods for solid waste samples as described in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)*. All PAH analyses were performed using SW-846 Method 8270. Appropriate qualifiers were noted all laboratory reports.

The Sample M data report included surrogates recoveries that were within the acceptance window for the analysis. The sample extract required dilution and the dilution factor of 150 to 1 was shown on the laboratory report. Because of the dilution due to matrix interferences, several of the PAH compounds found in the sample were flagged with a "J" as the results were below the normal laboratory reporting limits, which were elevated well above the LDR due to the dilution factor. The results showed the presence of numerous semi volatile organic compounds including PAH. The data report did not include the results of any matrix spike or matrix spike duplicates, or laboratory control samples. The data did appear consistent with typical spent catalyst results. The laboratory did not report any difficulties with the analysis other than the need to dilute the extract. Overall the analyses for sample M appear to be valid based on the information available.

The Sample N data report included some surrogates recoveries that were within the acceptance window for the analysis and others that could not be reported due to dilution of the extract. The sample extract required dilution and the dilution factor of 4 to 1 was shown on the laboratory report. The results showed the presence of numerous semi volatile organic compounds including the PAH. Several PAH compounds were found in the sample. The PAH results did not have any qualifiers, as the concentrations were above the laboratory reporting limit even after accounting for the dilution factor. The data report did not include the results of any matrix spike or matrix spike duplicates, or laboratory control samples. The data did appear consistent with typical spent catalyst results. The laboratory did not report any difficulties with the analysis other than the need to dilute the extract. Overall the analyses for sample N appear to be valid based on the information available.

Sample O did not have any PAH analyses. The waste characterization was limited to analysis of volatile and semi volatile organics in the leachate from the TCLP procedure and the analysis of total volatiles for a selected group of parameters. This dataset was included in the petition to show that the absence of PAH requirements for K172 results in

waste characterization that is not complete and ignores the currently unregulated PAH compounds.

The Sample P laboratory report did not include a report of surrogate recoveries. It appears the sample extract required dilution with a dilution factor of 100 to 1. Because of the dilution due to matrix interferences, all of the PAH compounds are shown as non detect. However all laboratory reporting limits are above the LDR due to the dilution factor. The results showed the presence of volatile organic compounds. The data report did not include the results of any matrix spike or matrix spike duplicates, or laboratory control samples. The data did appear consistent with typical spent catalyst results. The laboratory did not report any difficulties with the analysis other than the need to dilute the extract. The analyses for sample P appear to be reasonable based on the information available, but could not be fully validated due to the absence of a full QA/QC report for the analyses.


### Conclusions

Based on the sampling plan discussed with the VPRA members prior to sample collection, the use of grab samples, appropriate sampling equipment and sample collection containers (glass), and review of the chain of custody forms, the sampling procedures and sample handling are judged to be valid and in accordance with the USEPA recommended sampling procedures for PAH compounds as documented in the USEPA SW-846 publication.

Based on a review of the original chain of custody forms, the original lab reports and supporting QA reports, and discussion with the laboratory, all twenty samples for PAH analysis are judged to be valid and reported properly in accordance with Method 8270 and SW 846 QA requirements.

The four customer supplied datasets present data for spent catalyst that are based on approved USEPA methods performed by reputable commercial laboratories. Samples M and N had sufficient information to partially validate the data and the data appear valid. Sample P data appears to be representative of sound data, but could not be validated due to the lack of supporting QA/QC data. The data does appear to be based proper analytical procedures and representative of spent catalyst. Sample O did not contain PAH results and thus was not validated.

Respectively submitted by:

  
Dale A. Scherger, P.E.

Date: June 30, 2003

**TABLE 1 SUMMARY OF PACE PAH DATA  
LDR PETITION SAMPLE- DATA VALIDATION REVIEW**

Sample	EPA Method	Date Collected	Date Extracted	Date Analyzed	Surrogates Reported	Lab Control Sample	Lab Duplicate	Method Blank	Quantitation Limit Reported
<b>BATCH 1</b>									
Sample K	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample L	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample C	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample D	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample E	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample F	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample G	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample H	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample I	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample J	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
<b>BATCH 2</b>									
Sample A	8270	2/21/2001	3/1/2001	3/5/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample B	8270	2/21/2001	3/1/2001	3/2/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
<b>BATCH 3</b>									
Sample W1	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W2	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W3	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W4	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W5	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W6	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W7	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W8	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes

(1) Surrogates were used in all samples. Recoveries were low or zero due to matrix effects and dilution requirements  
Each batch included a blank, lab control sample and a lab control duplicate  
that were carried through extraction and analysis. Therefore the lab analysis is judged to be in control.

5/30/2003

## LDR PETITION SAMPLE- DATA VALIDATION REVIEW

Sample	EPA Method	Date Collected	Date Extracted	Date Analyzed	Surrogates Reported	Lab Control Sample	Lab Duplicate	Method Blank	Quantitation Limit Reported
<b>BATCH 1</b>									
Sample K	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample L	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample C	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample D	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample E	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample F	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample G	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample H	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample I	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample J	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
<b>BATCH 2</b>									
Sample A	8270	2/21/2001	3/1/2001	3/5/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample B	8270	2/21/2001	3/1/2001	3/2/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
<b>BATCH 3</b>									
Sample W1	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W2	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W3	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W4	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W5	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W6	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W7	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W8	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes

(1) Surrogates were used in all samples. Recoveries were low or zero due to matrix effects and dilution requirements  
 Each batch included a blank, lab control sample and a lab control duplicate  
 that were carried through extraction and analysis. Therefore the lab analysis is judged to be in control.

5/30/2003



## LDR PETITION SAMPLE- DATA VALIDATION REVIEW

## Lab reports supplied by Others

Sample	EPA Method	Date Collected	Date Extracted	Date Analyzed	Surrogates Reported	Lab Control Sample	Lab Duplicate	Method Blank	Quantitation Limit Reported
<b>BATCH 1</b>									
Sample M	8270C	5/17/2000	5/18/2000	5/23/2000	Acceptable	Not available for review	Not available for review	Not available for review	Yes
<b>BATCH 2</b>									
Sample N	8270C	1/17/2001	1/17/2001	1/18/2001	YES (1)	Not available for review	Not available for review	Not available for review	Yes
<b>BATCH 3</b>									
Sample P	8270C	10/14/1999	10/20/1999	10/27/1999	Not available for review	Not available for review	Not available for review	Not available for review	Yes

(1) Surrogates were used in sample. Recoveries were low or zero due to matrix effects and dilution requirements  
Lab flagged the data and footnoted the data with explanation of dilution requirements

(2) LCS, LCSD, Method Blank not included with data report, not available for review.

# LDR PETITION SAMPLE- DATA VALIDATION REVIEW

Sample	EPA Method	Date Collected	Date Extracted	Date Analyzed	Surrogates Reported	Lab Control Sample	Lab Duplicate	Method Blank	Quantitation Limit Reported
<b>BATCH 1</b>									
Sample K	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample L	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample C	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample D	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample E	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample F	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample G	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample H	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample I	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample J	8270	3/12/2001	3/23/2001	3/26/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
<b>BATCH 2</b>									
Sample A	8270	2/21/2001	3/1/2001	3/5/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample B	8270	2/21/2001	3/1/2001	3/2/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
<b>BATCH 3</b>									
Sample W1	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W2	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W3	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W4	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W5	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W6	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W7	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes
Sample W8	8270	1/31/2001	2/12/2001	2/17/2001	YES (1)	Acceptable	Acceptable	Acceptable	Yes

(1) Surrogates were used in all samples. Recoveries were low or zero due to matrix effects and dilution requirements. Each batch included a blank, lab control sample and a lab control duplicate that were carried through extraction and analysis. Therefore the lab analysis is judged to be in control.

# LDR PETITION SAMPLE- DATA VALIDATION REVIEW

## Lab reports supplied by Others

Sample	EPA Method	Date Collected	Date Extracted	Date Analyzed	Surrogates Reported	Lab Control Sample	Lab Duplicate	Method Blank	Quantitation Limit Reported
<b>BATCH 1</b>									
Sample M	8270C	5/17/2000	5/18/2000	5/23/2000	Acceptable	Not available for review (2)	Not available for review (2)	Not available for review (2)	Yes
<b>BATCH 2</b>									
Sample N	8270C	1/17/2001	1/17/2001	1/18/2001	YES (1)	Not available for review	Not available for review	Not available for review	Yes
<b>BATCH 3</b>									
Sample P	8270C	10/14/1999	10/20/1999	10/27/1999	Not available for review	Not available for review	Not available for review	Not available for review	Yes

(1) Surrogates were used in sample. Recoveries were low or zero due to matrix effects and dilution requirements  
Lab flagged the data and footnoted the data with explanation of dilution requirements

(2) LCS, LCSD, Method Blank not included with data report, not available for review.



**Pace Analytical Services, Inc.**  
1000 Riverbend Blvd, Suite F  
St. Rose, LA 70087  
Phone: 504.469.0333  
Fax: 504.469.0555

March 30, 2001

Client Services  
Pace Houston  
900 Gemini  
Houston, TX 77058

RE: Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Dear Services:

Enclosed are the analytical results for sample(s) received by the laboratory on March 15, 2001. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Karen Brown  
Project Manager

Enclosures



**Pace Analytical Services, Inc.**  
900 Gemini Avenue  
Houston, TX 77058  
Phone: 281.488.1810  
Fax: 281.488.4661

Scherger Associates  
12410 Willington Rd.  
Huntersville, NC 28078

Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

### LDR Petition Sample K

Attn: Mr. Dale Scherger  
Phone: 704-947-7050

Solid results are reported on a wet weight basis

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 03/12/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 03/15/01 08:25

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Li
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#### GC/MS Semivolatiles

##### SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	208-96-8		
Anthracene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	50-32-8		
Chrysene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	206-44-0		
Fluorene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	193-39-5		
Naphthalene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	85-01-8		
Pyrene	ND	ug/kg	3330	10.0	03/26/01 03:51	DSHA	129-00-0		
Nitrobenzene-d5 (S)	94	%		1.0	03/26/01 03:51	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	03/26/01 03:51	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	03/26/01 03:51	DSHA	1718-51-0		
Phenol-d5 (S)	75	%		1.0	03/26/01 03:51	DSHA	4165-62-2		
2-Fluorophenol (S)	55	%		1.0	03/26/01 03:51	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	03/26/01 03:51	DSHA	118-79-6		

Date Extracted

03/23/01

Comments : The sample extract could not be concentrated to the normal final volume for 8270. This results in elevated PRL Internal standard and surrogate failure attributed to matrix interference based on visual review of the chromatogram (SW8270).

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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LDR Petition  
SAMPLE K

**Pace Analytical Services, Inc.**  
900 Gemini Avenue  
Houston, TX 77058  
Phone: 281.488.1810  
Fax: 281.488.4661

Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 03/12/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 03/15/01 08:25

[REDACTED] Please refer to the attached report.

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 03/12/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 03/15/01 08:25

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Footnote	Limit
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	208-96-8		
Anthracene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	50-32-8		
Chrysene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	206-44-0		
Fluorene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	193-39-5		
Naphthalene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	85-01-8		
Pyrene	ND	ug/kg	32400	97.2	03/26/01 09:23	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	03/26/01 09:23	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	03/26/01 09:23	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	03/26/01 09:23	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	03/26/01 09:23	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	03/26/01 09:23	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	03/26/01 09:23	DSHA	118-79-6		
Date Extracted					03/23/01				

Comments : The sample extract could not be concentrated to the normal final volume for 8270. This results in elevated PRLs. Sample was diluted due to high concentrations of non-target compounds, resulting in higher PRL's and no surrogate recovery (SW8270).

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: [REDACTED]

Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 03/12/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 03/15/01 08:25

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Lim
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	208-96-8		
Anthracene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	50-32-8		
Chrysene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	206-44-0		
Fluorene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	193-39-5		
Naphthalene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	85-01-8		
Pyrene	ND	ug/kg	33000	99.1	03/26/01 10:05	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	03/26/01 10:05	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	03/26/01 10:05	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	03/26/01 10:05	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	03/26/01 10:05	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	03/26/01 10:05	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	03/26/01 10:05	DSHA	118-79-6		

Date Extracted

03/23/01

Comments : The sample extract could not be concentrated to the normal final volume for 8270. This results in elevated PRLs. Sample was diluted due to high concentrations of non-target compounds, resulting in higher PRL's and no surrogate recovery (SW8270).

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 03/12/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 03/15/01 08:25

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Lin
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	208-96-8		
Anthracene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	50-32-8		
Chrysene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	206-44-0		
Fluorene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	193-39-5		
Naphthalene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	85-01-8		
Pyrene	ND	ug/kg	32800	98.6	03/26/01 08:00	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	03/26/01 08:00	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	03/26/01 08:00	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	03/26/01 08:00	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	03/26/01 08:00	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	03/26/01 08:00	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	03/26/01 08:00	DSHA	118-79-6		

Date Extracted

03/23/01

Comments : The sample extract could not be concentrated to the normal final volume for 8270. This results in elevated PRLs. Sample was diluted due to high concentrations of non-target compounds, resulting in higher PRL's and no surrogate recovery (SW8270).

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 03/12/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 03/15/01 08:25

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Lim
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	208-96-8		
Anthracene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	50-32-8		
Chrysene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	206-44-0		
Fluorene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	193-39-5		
Naphthalene	485.	ug/kg	330.	1.0	03/26/01 04:33	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	85-01-8		
Pyrene	ND	ug/kg	330.	1.0	03/26/01 04:33	DSHA	129-00-0		
Nitrobenzene-d5 (S)	86	%		1.0	03/26/01 04:33	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	03/26/01 04:33	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	03/26/01 04:33	DSHA	1718-51-0		
Phenol-d5 (S)	59	%		1.0	03/26/01 04:33	DSHA	4165-62-2		
2-Fluorophenol (S)	51	%		1.0	03/26/01 04:33	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	03/26/01 04:33	DSHA	118-79-6		
Date Extracted					03/23/01				

Comments : Internal standard and surrogate failure attributed to matrix interference based on visual review of the chromatogram (SW8270).

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 03/12/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 03/15/01 08:25

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Li
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	208-96-8		
Anthracene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	50-32-8		
Chrysene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	206-44-0		
Fluorene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	193-39-5		
Naphthalene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	85-01-8		
Pyrene	ND	ug/kg	33200	99.6	03/26/01 08:42	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	03/26/01 08:42	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	03/26/01 08:42	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	03/26/01 08:42	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	03/26/01 08:42	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	03/26/01 08:42	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	03/26/01 08:42	DSHA	118-79-6		

Date Extracted

03/23/01

Comments : The sample extract could not be concentrated to the normal final volume for 8270. This results in elevated PRLs. Sample was diluted due to high concentrations of non-target compounds, resulting in higher PRL's and no surrogate recovery (SW8270).

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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LDR Petition Sample G

Pace Analytical Services, Inc.

900 Gemini Avenue

Houston, TX 77058

Phone: 281.488.1810

Fax: 281.488.4661

Lab Project Number: [REDACTED]

Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 03/12/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 03/15/01 08:25

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Lim
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	208-96-8		
Anthracene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	50-32-8		
Chrysene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	206-44-0		
Fluorene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	193-39-5		
Naphthalene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	85-01-8		
Pyrene	ND	ug/kg	32500	97.7	03/26/01 10:47	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	03/26/01 10:47	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	03/26/01 10:47	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	03/26/01 10:47	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	03/26/01 10:47	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	03/26/01 10:47	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	03/26/01 10:47	DSHA	118-79-6		
Date Extracted					03/23/01				

Comments : Sample was diluted due to high concentrations of non-target compounds, resulting in higher PRL's and no surrogate recovery (SW8270).

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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LDR Petition Sample H

Pace Analytical Services, Inc.

900 Gemini Avenue

Houston, TX 77058

Phone: 281.488.1810

Fax: 281.488.4661

Lab Project Number: [REDACTED]

Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 03/12/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 03/15/01 08:25

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Li
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#### GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	208-96-8		
Anthracene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	50-32-8		
Chrysene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	206-44-0		
Fluorene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	193-39-5		
Naphthalene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	332.	1.0	03/26/01 07:18	DSHA	85-01-8		
Pyrene	3700	ug/kg	332.	1.0	03/26/01 07:18	DSHA	129-00-0		
Nitrobenzene-d5 (S)	81	%		1.0	03/26/01 07:18	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	70	%		1.0	03/26/01 07:18	DSHA	321-60-8		
Terphenyl-d14 (S)	177	%		1.0	03/26/01 07:18	DSHA	1718-51-0		
Phenol-d5 (S)	66	%		1.0	03/26/01 07:18	DSHA	4165-62-2		
2-Fluorophenol (S)	75	%		1.0	03/26/01 07:18	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	48	%		1.0	03/26/01 07:18	DSHA	118-79-6		
Date Extracted					03/23/01				

Comments : High surrogate recovery attributed to matrix effect (8270).

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 03/12/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 03/15/01 08:25

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Etnote	Li
------------	---------	-------	-----	----------	----------	---------	------	--------	----

GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	83-32-9
Acenaphthylene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	208-96-8
Anthracene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	120-12-7
Benzo(a)anthracene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	56-55-3
Benzo(b)fluoranthene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	205-99-2
Benzo(k)fluoranthene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	207-08-9
Benzo(g,h,i)perylene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	191-24-2
Benzo(a)pyrene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	50-32-8
Chrysene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	218-01-9
Dibenz(a,h)anthracene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	53-70-3
Fluoranthene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	206-44-0
Fluorene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	193-39-5
Naphthalene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	91-20-3
Phenanthrene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	85-01-8
Pyrene	ND	ug/kg	33000	99.2	03/26/01 11:29	DSHA	129-00-0
Nitrobenzene-d5 (S)	0	%		1.0	03/26/01 11:29	DSHA	4165-60-0
2-Fluorobiphenyl (S)	0	%		1.0	03/26/01 11:29	DSHA	321-60-8
Terphenyl-d14 (S)	0	%		1.0	03/26/01 11:29	DSHA	1718-51-0
Phenol-d5 (S)	0	%		1.0	03/26/01 11:29	DSHA	4165-62-2
2-Fluorophenol (S)	0	%		1.0	03/26/01 11:29	DSHA	367-12-4
2,4,6-Tribromophenol (S)	0	%		1.0	03/26/01 11:29	DSHA	118-79-6

Date Extracted

03/23/01

Comments : Sample was diluted due to high concentrations of non-target compounds, resulting in higher PRL's and no surrogate recovery (SW8270).

Sample was diluted due to high concentrations of non-target compounds, resulting in higher PRL's and no surrogate recovery (SW8270).

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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www.pacelabs.com

LDR Petition Sample J

**Pace Analytical Services, Inc.**

900 Gemini Avenue  
Houston, TX 77058

Phone: 281.488.1810

Fax: 281.488.4661

Lab Project Number: [REDACTED]

Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 03/12/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 03/15/01 08:25

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Lin
------------	---------	-------	-----	----------	----------	---------	------	--------	-----

**GC/MS Semivolatiles**

**SW8270 Semivolatiles, Soil**

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	208-96-8		
Anthracene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	50-32-8		
Chrysene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	206-44-0		
Fluorene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	193-39-5		
Naphthalene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	85-01-8		
Pyrene	ND	ug/kg	332000	998	03/26/01 12:10	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	03/26/01 12:10	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	03/26/01 12:10	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	03/26/01 12:10	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	03/26/01 12:10	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	03/26/01 12:10	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	03/26/01 12:10	DSHA	118-79-6		
Date Extracted					03/23/01				

Comments : The sample extract could not be concentrated to the normal final volume for 8270. This results in elevated PRLs. Sample was diluted due to high concentrations of non-target compounds, resulting in higher PRL's and no surrogate recovery (SW8270).

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

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PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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QC Batch: 50503  
Analysis Method: EPA 8270  
Associated Lab Samples:

Lab Project Number: ~~XXXXXXXXXX~~  
Client Project ID: ~~XXXXXXXXXX~~  
QC Batch Method: EPA 3550  
Analysis Description: SW8270 Semivolatiles, Soil  
~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~  
~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~

METHOD BLANK: 851683354  
Associated Lab Samples:

~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~  
~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~

Parameter	Units	Method Blank Result	PRL	Footnotes
Acenaphthene	ug/kg	ND	333	
Acenaphthylene	ug/kg	ND	333	
Anthracene	ug/kg	ND	333	
Benzo(a)anthracene	ug/kg	ND	333	
Benzo(b)fluoranthene	ug/kg	ND	333	
Benzo(k)fluoranthene	ug/kg	ND	333	
Benzo(g,h,i)perylene	ug/kg	ND	333	
Benzo(a)pyrene	ug/kg	ND	333	
Chrysene	ug/kg	ND	333	
Dibenz(a,h)anthracene	ug/kg	ND	333	
Fluoranthene	ug/kg	ND	333	
Fluorene	ug/kg	ND	333	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	333	
Naphthalene	ug/kg	ND	333	
Phenanthrene	ug/kg	ND	333	
Pyrene	ug/kg	ND	333	
Nitrobenzene-d5 (S)	%	96		
2-Fluorobiphenyl (S)	%	78		
Terphenyl-d14 (S)	%	66		
Phenol-d5 (S)	%	78		
2-Fluorophenol (S)	%	92		
2,4,6-Tribromophenol (S)	%	47		

Date: 03/30/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: **████████**  
Client Project ID: **████████**

LABORATORY CONTROL SAMPLE & LCSD: <b>████████</b> <b>████████</b>		Spike		LCSD		Spike		RPD	Footnotes
Parameter	Units	Conc.	Result	% Rec	Result	% Rec	Dup		
Acenaphthene	ug/kg	666.7	480.5	72	465.1	70	3		
Acenaphthylene	ug/kg	666.7	445.2	67	442.1	66	1		
Anthracene	ug/kg	666.7	454.9	68	462.8	69	2		
Benzo(a)anthracene	ug/kg	666.7	473.1	71	464.2	70	2		
Benzo(b)fluoranthene	ug/kg	666.7	446.2	67	508.5	76	13		
Benzo(k)fluoranthene	ug/kg	666.7	481.6	72	548.7	82	13		
Benzo(g,h,i)perylene	ug/kg	666.7	560.9	84	549.6	82	2		
Benzo(a)pyrene	ug/kg	666.7	535.6	80	530.4	80	1		
Chrysene	ug/kg	666.7	567.4	85	521.9	78	8		
Dibenz(a,h)anthracene	ug/kg	666.7	551.4	83	533.6	80	3		
Fluoranthene	ug/kg	666.7	484.5	73	480.4	72	1		
Fluorene	ug/kg	666.7	471.5	71	477.0	72	1		
Indeno(1,2,3-cd)pyrene	ug/kg	666.7	602.8	90	588.0	88	2		
Naphthalene	ug/kg	666.7	481.3	72	467.4	70	3		
Phenanthrene	ug/kg	666.7	490.0	74	472.6	71	4		
Pyrene	ug/kg	666.7	545.1	82	536.8	80	2		
Nitrobenzene-d5 (S)				86		90			
2-Fluorobiphenyl (S)				68		74			
Terphenyl-d14 (S)				58		62			
Phenol-d5 (S)				74		77			
2-Fluorophenol (S)				82		84			
2,4,6-Tribromophenol (S)				55		60			

Date: 03/30/01

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

---

**QUALITY CONTROL DATA PARAMETER FOOTNOTES**

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

Date: 03/30/01

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## **REPORT OF LABORATORY ANALYSIS**

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**Pace Analytical Services, Inc.**  
900 Gemini Avenue  
Houston, TX 77058  
Phone: 281.488.1810  
Fax: 281.488.4661

March 16, 2001

Mr. Dale Scherger  
Ferroalloys Association  
12410 Willington Rd.  
Huntersville, NC 28078

RE: Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Dear Mr. Scherger:

Enclosed are the analytical results for sample(s) received by the laboratory on February 23, 2001. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Roy Quintanilla  
Project Manager

Enclosures

## REPORT OF LABORATORY ANALYSIS

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Ferroalloys Association  
12410 Willington Rd.  
Huntersville, NC 28078

Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

## LDR Petition Sample A

Attn: Mr. Dale Scherger  
Phone:

Solid results are reported on a wet weight basis

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 02/21/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 02/23/01 09:05

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Limit
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### GC/MS Semivolatiles

#### SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	208-96-8		
Anthracene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	50-32-8		
Chrysene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	206-44-0		
Fluorene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	193-39-5		
Naphthalene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	85-01-8		
Pyrene	ND	ug/kg	33300	100	03/05/01 14:52	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	03/05/01 14:52	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	03/05/01 14:52	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	03/05/01 14:52	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	03/05/01 14:52	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	03/05/01 14:52	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	03/05/01 14:52	DSHA	118-79-6		
Date Extracted					03/01/01				

Comments: The sample extract could not be concentrated to the normal final volume for 8270. This results in elevated PRLs. Sample was diluted due to high concentrations of non-target compounds, resulting in higher PRL's and no surrogate recovery (SW8270).

Date: 03/16/01

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## REPORT OF LABORATORY ANALYSIS

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LDR Petition SAMPLE A

Pace Analytical Services, Inc.  
900 Gemini Avenue  
Houston, TX 77058  
Phone: 281.488.1810  
Fax: 281.488.4661

Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 02/21/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 02/23/01 09:05

[REDACTED]

Date: 03/16/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: ~~██████████~~  
Client Project ID: ~~██████████~~

Lab Sample No: ~~██████████~~ Project Sample Number: ~~██████████~~ Date Collected: 02/21/01 00:00  
Client Sample ID: ~~██████████~~ Matrix: Soil Date Received: 02/23/01 09:05

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Footnote	Li
------------	---------	-------	-----	----------	----------	---------	------	----------	----

GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	208-96-8		
Anthracene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	50-32-8		
Chrysene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	206-44-0		
Fluorene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	193-39-5		
Naphthalene	ND	ug/kg	333000	1000	03/02/01 17:38	DSHA	91-20-3		
Phenanthrene	471000	ug/kg	333000	1000	03/02/01 17:38	DSHA	85-01-8		
Pyrene	1950000	ug/kg	333000	1000	03/02/01 17:38	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	03/02/01 17:38	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	03/02/01 17:38	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	03/02/01 17:38	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	03/02/01 17:38	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	03/02/01 17:38	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	03/02/01 17:38	DSHA	118-79-6		

Date Extracted

03/01/01

Comments : The sample extract could not be concentrated to the normal final volume for 8270. This results in elevated PRLs. Sample was diluted due to high concentrations of non-target compounds, resulting in higher PRL's and no surrogate recovery (SW8270).

Date: 03/16/01

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## REPORT OF LABORATORY ANALYSIS

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LDR Petition Sample B

**Pace Analytical Services, Inc.**  
900 Gemini Avenue  
Houston, TX 77058  
Phone: 281.488.1810  
Fax: 281.488.4661

Lab Project Number: [REDACTED]

Client Project ID: [REDACTED]

---

PARAMETER FOOTNOTES

ND Not Detected  
NC Not Calculable  
PRL Pace Reporting Limit  
(S) Surrogate

Date: 03/16/01

Page: 4

## REPORT OF LABORATORY ANALYSIS

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QC Batch: **[REDACTED]**  
Analysis Method: EPA 8270  
Associated Lab Samples: **[REDACTED]**

Lab Project Number: **[REDACTED]**  
Client Project ID: **[REDACTED]**  
QC Batch Method: EPA 3550  
Analysis Description: SW8270 Semivolatiles, Soil

METHOD BLANK: **[REDACTED]**  
Associated Lab Samples: **[REDACTED]**

Parameter	Units	Method Blank Result	PRL	Footnotes
Acenaphthene	ug/kg	ND	333	
Acenaphthylene	ug/kg	ND	333	
Anthracene	ug/kg	ND	333	
Benzo(a)anthracene	ug/kg	ND	333	
Benzo(b)fluoranthene	ug/kg	ND	333	
Benzo(k)fluoranthene	ug/kg	ND	333	
Benzo(g,h,i)perylene	ug/kg	ND	333	
Benzo(a)pyrene	ug/kg	ND	333	
Chrysene	ug/kg	ND	333	
Dibenz(a,h)anthracene	ug/kg	ND	333	
Fluoranthene	ug/kg	ND	333	
Fluorene	ug/kg	ND	333	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	333	
Naphthalene	ug/kg	ND	333	
Phenanthrene	ug/kg	ND	333	
Pyrene	ug/kg	ND	333	
Nitrobenzene-d5 (S)	%	87		
2-Fluorobiphenyl (S)	%	80		
Terphenyl-d14 (S)	%	84		
Phenol-d5 (S)	%	50		
2-Fluorophenol (S)	%	46		
2,4,6-Tribromophenol (S)	%	36		

LABORATORY CONTROL SAMPLE & LCSD: ██████████ ██████████						Spike		
Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Dup % Rec	RPD	Footnotes
Acenaphthene	ug/kg	666.7	518.9	78	441.1	66	16	
Acenaphthylene	ua/ka	666.7	498.5	75	444.7	67	11	

Date: 03/16/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: ~~XXXXXXXXXX~~

Client Project ID: ~~XXXXXXXXXX~~

LABORATORY CONTROL SAMPLE & LCSD: <del>XXXXXXXXXX</del> <del>XXXXXXXXXX</del>		Spike		LCSD		Spike		Footnotes
Parameter	Units	Conc.	Result	% Rec	Result	Dup	RPD	
Anthracene	ug/kg	666.7	485.7	73	453.6	68	7	
Benzo(a)anthracene	ug/kg	666.7	487.7	73	488.9	73	0	
Benzo(b)fluoranthene	ug/kg	666.7	598.0	90	511.8	77	16	
Benzo(k)fluoranthene	ug/kg	666.7	656.1	98	533.9	80	21	
Benzo(g,h,i)perylene	ug/kg	666.7	480.1	72	447.8	67	7	
Benzo(a)pyrene	ug/kg	666.7	472.3	71	537.5	81	13	
Chrysene	ug/kg	666.7	640.9	96	508.4	76	23	
Dibenz(a,h)anthracene	ug/kg	666.7	470.5	71	433.3	65	8	
Fluoranthene	ug/kg	666.7	425.3	64	415.4	62	2	
Fluorene	ug/kg	666.7	536.7	80	488.2	73	9	
Indeno(1,2,3-cd)pyrene	ug/kg	666.7	503.4	76	464.9	70	8	
Naphthalene	ug/kg	666.7	467.8	70	422.0	63	10	
Phenanthrene	ug/kg	666.7	515.3	77	520.7	78	1	
Pyrene	ug/kg	666.7	412.7	62	404.2	61	2	
Nitrobenzene-d5 (S)				105		90		
2-Fluorobiphenyl (S)				85		77		
Terphenyl-d14 (S)				86		82		
Phenol-d5 (S)				53		53		
2-Fluorophenol (S)				51		51		
2,4,6-Tribromophenol (S)				69		66		

Date: 03/16/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: ~~XXXXXX~~  
Client Project ID: ~~XXXXXX~~

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**QUALITY CONTROL DATA PARAMETER FOOTNOTES**

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

Date: 03/16/01

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## **REPORT OF LABORATORY ANALYSIS**

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**Pace Analytical Services, Inc.**

900 Gemini Avenue

Houston, TX 77058

Phone: 281.488.1810

Fax: 281.488.4661

February 20, 2001

Mr. Dale Scherger  
Scherger Associates  
12410 Willington Rd.  
Huntersville, NC 28078

RE: Lab Project Number; [REDACTED]  
Client Project ID: [REDACTED]

Dear Mr. Scherger:

Enclosed are the analytical results for sample(s) received by the laboratory on February 1, 2001. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Roy Quintanilla  
Project Manager

Enclosures

## **REPORT OF LABORATORY ANALYSIS**

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Pace Analytical Services, Inc.  
900 Gemini Avenue  
Houston, TX 77058  
Phone: 281.488.1810  
Fax: 281.488.4661

Scherger Associates  
12410 Willington Rd.  
Huntersville, NC 28078

Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

## LDR Petition Sample W1

Attn: Mr. Dale Scherger  
Phone: 704-947-7050

Solid results are reported on a wet weight basis

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 01/31/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 02/01/01 15:42

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Limit
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### GC/MS Semivolatiles

#### SW8270 Semivolatiles, Soil

#### Method: EPA 8270

#### Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	208-96-8		
Anthracene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	50-32-8		
Chrysene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	206-44-0		
Fluorene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	193-39-5		
Naphthalene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	85-01-8		
Pyrene	ND	ug/kg	3270	9.8	02/17/01 06:47	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	02/17/01 06:47	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	02/17/01 06:47	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	02/17/01 06:47	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	02/17/01 06:47	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	02/17/01 06:47	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	02/17/01 06:47	DSHA	118-79-6		

Date Extracted

02/12/01

Comments: The sample extract could not be concentrated to the normal final volume for 8270 sonication. This results in elevated PRLs and no surrogate recovery.

Date: 02/20/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: ~~██████████~~  
Client Project ID: ~~██████████~~

Lab Sample No: ~~██████████~~ Project Sample Number: ~~██████████~~ Date Collected: 01/31/01 00:00  
Client Sample ID: ~~██████████~~ Matrix: Soil Date Received: 02/01/01 15:42

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Lim
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	208-96-8		
Anthracene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	50-32-8		
Chrysene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	206-44-0		
Fluorene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	193-39-5		
Naphthalene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	85-01-8		
Pyrene	ND	ug/kg	3250	9.8	02/17/01 07:28	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	02/17/01 07:28	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	02/17/01 07:28	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	02/17/01 07:28	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	02/17/01 07:28	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	02/17/01 07:28	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	02/17/01 07:28	DSHA	118-79-6		
Date Extracted					02/12/01				

Comments : The sample extract could not be concentrated to the normal final volume for 8270 sonication. This results in elevated PRLs and no surrogate recovery.

Date: 02/20/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 01/31/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 02/01/01 15:42

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Footnote	Limit
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	208-96-8		
Anthracene	3620	ug/kg	3280	9.8	02/17/01 08:10	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	50-32-8		
Chrysene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	206-44-0		
Fluorene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	193-39-5		
Naphthalene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	91-20-3		
Phenanthrene	6560	ug/kg	3280	9.8	02/17/01 08:10	DSHA	85-01-8		
Pyrene	ND	ug/kg	3280	9.8	02/17/01 08:10	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	02/17/01 08:10	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	02/17/01 08:10	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	02/17/01 08:10	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	02/17/01 08:10	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	02/17/01 08:10	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	02/17/01 08:10	DSHA	118-79-6		
Date Extracted					02/12/01				

Comments : The sample extract could not be concentrated to the normal final volume for 8270 sonication. This results in elevated PRLs and no surrogate recovery.

Date: 02/20/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 01/31/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 02/01/01 15:42

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Footnote	Li
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	208-96-8		
Anthracene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	50-32-8		
Chrysene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	206-44-0		
Fluorene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	193-39-5		
Naphthalene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	85-01-8		
Pyrene	ND	ug/kg	3260	9.8	02/17/01 06:05	DSHA	129-00-0		
Nitrobenzene-d5 (S)	86	%		1.0	02/17/01 06:05	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	96	%		1.0	02/17/01 06:05	DSHA	321-60-8		
Terphenyl-d14 (S)	88	%		1.0	02/17/01 06:05	DSHA	1718-51-0		
Phenol-d5 (S)	64	%		1.0	02/17/01 06:05	DSHA	4165-62-2		
2-Fluorophenol (S)	53	%		1.0	02/17/01 06:05	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	102	%		1.0	02/17/01 06:05	DSHA	118-79-6		
Date Extracted					02/12/01				

Comments : The sample extract could not be concentrated to the normal final volume for 8270 sonication. This results in elevated PRLs and no surrogate recovery.

Date: 02/20/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: ~~██████████~~  
Client Project ID: ~~██████████~~

Lab Sample No: ~~██████████~~ Project Sample Number: ~~██████████~~ Date Collected: 01/31/01 00:00  
Client Sample ID: ~~██████████~~ Matrix: Soil Date Received: 02/01/01 15:42

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Lim
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	208-96-8		
Anthracene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	50-32-8		
Chrysene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	206-44-0		
Fluorene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	193-39-5		
Naphthalene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	91-20-3		
Phenanthrene	5580	ug/kg	3300	9.9	02/17/01 08:51	DSHA	85-01-8		
Pyrene	ND	ug/kg	3300	9.9	02/17/01 08:51	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	02/17/01 08:51	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	02/17/01 08:51	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	02/17/01 08:51	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	02/17/01 08:51	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	02/17/01 08:51	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	02/17/01 08:51	DSHA	118-79-6		
Date Extracted					02/12/01				

Comments : The sample extract could not be concentrated to the normal final volume for 8270 sonication. This results in elevated PRLs and no surrogate recovery.

Date: 02/20/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: ~~████████~~  
Client Project ID: ~~████████~~

Lab Sample No: ~~████████~~ Project Sample Number: ~~████████~~ Date Collected: 01/31/01 00:00  
Client Sample ID: ~~████████~~ Matrix: Soil Date Received: 02/01/01 15:42

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Ftnote	Lin
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	208-96-8		
Anthracene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	50-32-8		
Chrysene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	206-44-0		
Fluorene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	193-39-5		
Naphthalene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	91-20-3		
Phenanthrene	5620	ug/kg	3310	9.9	02/17/01 09:33	DSHA	85-01-8		
Pyrene	ND	ug/kg	3310	9.9	02/17/01 09:33	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	02/17/01 09:33	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	02/17/01 09:33	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	02/17/01 09:33	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	02/17/01 09:33	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	02/17/01 09:33	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	02/17/01 09:33	DSHA	118-79-6		
Date Extracted					02/12/01				

Comments : The sample extract could not be concentrated to the normal final volume for 8270 sonication. This results in elevated PRLs and no surrogate recovery.

Date: 02/20/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Lab Sample No: [REDACTED]	Project Sample Number: [REDACTED]	Date Collected: 01/31/01 00:00
Client Sample ID: [REDACTED]	Matrix: Soil	Date Received: 02/01/01 15:42

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Footnote	Limit
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	208-96-8		
Anthracene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	50-32-8		
Chrysene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	206-44-0		
Fluorene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	193-39-5		
Naphthalene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	85-01-8		
Pyrene	ND	ug/kg	3290	9.9	02/17/01 10:14	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	02/17/01 10:14	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	02/17/01 10:14	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	02/17/01 10:14	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	02/17/01 10:14	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	02/17/01 10:14	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	02/17/01 10:14	DSHA	118-79-6		
Date Extracted					02/12/01				

Comments : The sample extract could not be concentrated to the normal final volume for 8270 sonication. This results in elevated PRLs and no surrogate recovery.

Date: 02/20/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

Lab Sample No: [REDACTED] Project Sample Number: [REDACTED] Date Collected: 01/31/01 00:00  
Client Sample ID: [REDACTED] Matrix: Soil Date Received: 02/01/01 15:42

Parameters	Results	Units	PRL	Dilution	Analyzed	Analyst	CAS#	Footnote	Li
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GC/MS Semivolatiles

SW8270 Semivolatiles, Soil

Method: EPA 8270

Prep Method: EPA 3550

Acenaphthene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	83-32-9		
Acenaphthylene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	208-96-8		
Anthracene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	120-12-7		
Benzo(a)anthracene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	56-55-3		
Benzo(b)fluoranthene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	205-99-2		
Benzo(k)fluoranthene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	207-08-9		
Benzo(g,h,i)perylene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	191-24-2		
Benzo(a)pyrene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	50-32-8		
Chrysene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	218-01-9		
Dibenz(a,h)anthracene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	53-70-3		
Fluoranthene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	206-44-0		
Fluorene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	193-39-5		
Naphthalene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	91-20-3		
Phenanthrene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	85-01-8		
Pyrene	ND	ug/kg	3320	10.0	02/17/01 15:05	DSHA	129-00-0		
Nitrobenzene-d5 (S)	0	%		1.0	02/17/01 15:05	DSHA	4165-60-0		
2-Fluorobiphenyl (S)	0	%		1.0	02/17/01 15:05	DSHA	321-60-8		
Terphenyl-d14 (S)	0	%		1.0	02/17/01 15:05	DSHA	1718-51-0		
Phenol-d5 (S)	0	%		1.0	02/17/01 15:05	DSHA	4165-62-2		
2-Fluorophenol (S)	0	%		1.0	02/17/01 15:05	DSHA	367-12-4		
2,4,6-Tribromophenol (S)	0	%		1.0	02/17/01 15:05	DSHA	118-79-6		

Date Extracted

02/12/01

Comments : The sample extract could not be concentrated to the normal final volume for 8270 sonication. This results in elevated PRLs and no surrogate recovery.

Date: 02/20/01

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: ~~XXXXXX~~  
Client Project ID: ~~XXXXXX~~

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PARAMETER FOOTNOTES

ND Not Detected  
NC Not Calculable  
PRL Pace Reporting Limit  
(S) Surrogate

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## **REPORT OF LABORATORY ANALYSIS**

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QC Batch: ~~XXXXXXXXXX~~  
Analysis Method: EPA 8270  
Associated Lab Samples: ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~

Lab Project Number: ~~XXXXXXXXXX~~  
Client Project ID: ~~XXXXXXXXXX~~

QC Batch Method: EPA 3550  
Analysis Description: SW8270 Semivolatiles, Soil

METHOD BLANK: 851676946  
Associated Lab Samples: ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~

Parameter	Units	Method Blank Result	PRL	Footnotes
Acenaphthene	ug/kg	ND	333	
Acenaphthylene	ug/kg	ND	333	
Anthracene	ug/kg	ND	333	
Benzo(a)anthracene	ug/kg	ND	333	
Benzo(b)fluoranthene	ug/kg	ND	333	
Benzo(k)fluoranthene	ug/kg	ND	333	
Benzo(g,h,i)perylene	ug/kg	ND	333	
Benzo(a)pyrene	ug/kg	ND	333	
Chrysene	ug/kg	ND	333	
Dibenz(a,h)anthracene	ug/kg	ND	333	
Fluoranthene	ug/kg	ND	333	
Fluorene	ug/kg	ND	333	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	333	
Naphthalene	ug/kg	ND	333	
Phenanthrene	ug/kg	ND	333	
Pyrene	ug/kg	ND	333	
Nitrobenzene-d5 (S)	%	102		
2-Fluorobiphenyl (S)	%	106		
Terphenyl-d14 (S)	%	108		
Phenol-d5 (S)	%	76		
2-Fluorophenol (S)	%	72		
2,4,6-Tribromophenol (S)	%	121		

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## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: **[REDACTED]**

Client Project ID: **[REDACTED]**

LABORATORY CONTROL SAMPLE & LCSD: **[REDACTED]**

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Acenaphthene	ug/kg	666.7	611.9	92	676.1	101	10	
Acenaphthylene	ug/kg	666.7	583.3	88	636.8	96	9	
Anthracene	ug/kg	666.7	633.9	95	638.0	96	1	
Benzo(a)anthracene	ug/kg	666.7	698.5	105	677.7	102	3	
Benzo(b)fluoranthene	ug/kg	666.7	725.0	109	676.9	102	7	
Benzo(k)fluoranthene	ug/kg	666.7	768.5	115	676.9	102	13	
Benzo(g,h,i)perylene	ug/kg	666.7	609.7	92	529.9	80	14	
Benzo(a)pyrene	ug/kg	666.7	643.7	97	653.7	98	2	
Chrysene	ug/kg	666.7	665.8	100	633.9	95	5	
Dibenz(a,h)anthracene	ug/kg	666.7	573.6	86	501.2	75	13	
Fluoranthene	ug/kg	666.7	681.7	102	724.9	109	6	
Fluorene	ug/kg	666.7	592.6	89	650.0	98	9	
Indeno(1,2,3-cd)pyrene	ug/kg	666.7	633.0	95	562.0	84	12	
Naphthalene	ug/kg	666.7	596.4	90	558.1	84	7	
Phenanthrene	ug/kg	666.7	659.9	99	660.8	99	0	
Pyrene	ug/kg	666.7	738.9	111	771.2	116	4	
Nitrobenzene-d5 (S)				119		118		
2-Fluorobiphenyl (S)				104		103		
Terphenyl-d14 (S)				99		98		
Phenol-d5 (S)				97		71		
2-Fluorophenol (S)				77		64		
2,4,6-Tribromophenol (S)				92		105		

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Lab Project Number: [REDACTED]  
Client Project ID: [REDACTED]

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**QUALITY CONTROL DATA PARAMETER FOOTNOTES**

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

Date: 02/20/01

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